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TRANSPORT INFRASTRUCTURE OF A RESORT TOWN AND TRANSPORT ACCESSIBILITY

INFRASTRUKTURA TRANSPORTOWA MIEJSCOWOŚCI WYPOCZYNKOWEJ A DOSTĘPNOŚĆ TRANSPORTOWA

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C. Statistical analysis/ Analiza statystyczna
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Abstract

Subject and purpose of work: The aim of the article is to determine which elements of the transport infrastructure in a resort town are considered important by respondents in assessing tourist accessibility. The study focuses on economic and spatial aspects.

Materials and methods: Exploratory factor analysis was used for the analysis, based on data collected through a CAWI questionnaire from a random sample of 1,000 Poles.

Results: Four key areas of infrastructure were identified: general, bicycle transport, public transport, and amenities for people with disabilities.

Conclusions: The transport accessibility of a resort town is largely determined by the quality of the general infrastructure. Tourists prefer individual transport, highlighting the importance of well-developed road infrastructure. Bicycle infrastructure and public transport also play significant roles, especially for tourists who prefer active and ecological means of transport. Amenities for people with disabilities are crucial for ensuring equal access to tourist attractions.

Keywords: exploratory factor analysis, transport infrastructure, tourist accessibility, resort town

Streszczenie

Przedmiot i cel pracy: Celem artykułu jest określenie, które z badanych elementów infrastruktury transportowej miejscowości wypoczynkowej, respondenci uważają za istotne w kontekście oceny dostępności turystycznej. Wobec tego badanie koncentruje się na aspektach ekonomicznych i przestrzennych związanych z infrastrukturą transportową miejscowości wypoczynkowej.

Materiały i metody: Do analizy wykorzystano eksploracyjną analizę czynnikową, przeprowadzoną na podstawie danych zebranych za pomocą kwestionariusza ankietowego CAWI od losowej próby 1000 Polaków.

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Wyniki: Zidentyfikowano cztery kluczowe obszary infrastruktury: ogólną, transportu rowerowego, komunikacji publicznej oraz udogodnień dla osób z niepełnosprawnościami.

Wnioski: Dostępność transportowa miejscowości wypoczynkowej jest w dużej mierze determinowana przez jakość infrastruktury ogólnej. Turyści preferują korzystanie z transportu indywidualnego, co podkreśla znaczenie dobrze rozwiniętej infrastruktury drogowej. Infrastruktura rowerowa oraz komunikacja publiczna również odgrywają istotną rolę, szczególnie dla turystów preferujących aktywny wypoczynek i ekologiczne środki transportu. Z kolei udogodnienia dla osób z niepełnosprawnościami są kluczowe dla zapewnienia równego dostępu do atrakcji turystycznych.

Słowa kluczowe: infrastruktura transportowa, eksploracyjna analiza czynnikowa, dostępność turystyczna, miejscowość wypoczynkowa

Introduction

The transportation infrastructure of a resort has an impact on its accessibility for tourists, which indirectly affects the development of tourism in the region. Transportation accessibility is perceived differently (Pawlikowska-Piechotka, 2009; Szołtysek, 2015; Załoga et al., 2019), while at its core it determines the possibility and scale of adaptation of a resort town to the perception and involvement of the tourist. Well-designed transportation infrastructure can be inclusive, which offsets the negative effects of transportation exclusion, and enables people with disabilities to fully participate in tourism life.

The purpose of the article is to determine which of the surveyed elements of the transportation infrastructure of a resort town, respondents consider important in the context of assessing tourist accessibility. The adoption of such a research objective implies the need to focus the study on economic and spatial aspects, and guides the authors to diagnose the factors determining the relevance of transport infrastructure in the perspective of accessibility to a resort town. In light of the assumptions made, exploratory factor analysis was used to conduct the study. This is a statistical method used to study the relationships between multiple variables, which helps to identify hidden factors that best (under given conditions) explain the relationships contained in the primary data (Laudański, Mańkowski, Flaszka, 2012).

The chosen method is expected to allow a new look at the phenomenon under study, since so far other approaches and methods have been used to assess the transport accessibility of localities or resort areas. Akhmetbekova, Plachinta, Saipov and Dunets (2024) used ArcGIS-based assessments and spatial modeling to map accessibility from towns surrounding the Shchuchinsk-Borovoye resort region in Kazakhstan. Accessibility is also assessed using an indicator method, as shown by Van Eldijk, Gil, Kuska, Sisinty Patro (2020). In the authors' study, indicators of tourist accessibility include travel time, choice and service efficiency, among others, which helps quantify the impact of transportation infrastructure on local tourist accessibility. A similar approach was presented by Lomakin (2022), by evaluating various parameters that determine how easily people can use transportation services in a region. However, these are methods and studies that have not explicitly determined how much the transportation infrastructure elements of a resort town are crucial to the perception that it is accessible to tourism (including in terms of transportation).

The structure of this article is as follows. First, the terminological complexities of a resort town, tourism accessibility and transportation infrastructure are explained. Next, the authors go on to analyze the results of their own research, which is preceded by a brief characterization of the mechanism of obtaining research data and the method used. In turn, the final section presents the conclusions of the study enriched by a polemic based on the concept of the inverted mobility pyramid. This made it possible to go beyond the strictly descriptive nature of the study toward identifying a broader cognitive problem.

Transportation accessibility of a resort town

A tourist destination is a "destination point for tourist migration" (Gaworecki, 2003). Importantly, this place must be characterized by appropriate tourist values, tourist infrastructure, and transportation accessibility. Due to the different motivations of tourists, tourist destinations can be divided into those with a narrower and broader focus. From the point of view of this article and the research conducted, localities with a narrower meaning such as leisure destinations (i.e. resorts, vacation destinations and localities near

the place of residence – good for weekend trips) will be important (Gaworecki, 2003). Hence, the object of study set at the outset of the article's objective established a priori as resort town.

Accessibility is a complex concept, related to many factors. Szołtysek (2015), following Mosley, sees three types of accessibility viz: (1) spatial, (2) social and (3) economic. In turn, in the context of city logistics, a distinction is made between: (1) spatial (geographic) accessibility and (2) communication (transportation) accessibility. While the latter is a much broader concept and is defined as the totality of communication relations in a given area. On the other hand, Crew et al. (2019), following Litman, consider transportation accessibility, distinguishing its three types, viz: (1) physical accessibility related to access to transportation, (2) geographic accessibility defining the ease of reaching a chosen location, and (3) social accessibility related to the ability to use transportation services. Similarly, Pawlikowska-Piechotka (2009) points out that tourism development depends on the degree of transportation accessibility, i.e. on: (1) speed of travel, (2) convenience and (3) safety of the tourist.

The transportation infrastructure of a resort is a very important element in the development of tourism, and transportation services are among the basic tourist services and shape tourist traffic. Milewski (2008) divides tourism road infrastructure into linear and point infrastructure, and extends this division to include aspects related to the movement of tourists. Within the framework of point infrastructure, in addition to the common bus stops or technical stations, facilities and facilities for serving travelers are indicated, i.e. tourist information, roadside food and beverage outlets, accommodation bases, or travel service areas. Within the framework of tourist infrastructure, one can also talk about tourist trails, including hiking, skiing, horseback riding and bicycle trails. They should be attractive to tourists, be uniformly marked, convenient and safe for tourists. Milewski enriched the road transportation infrastructure, including information on the means of transportation chosen by tourists. He stresses that travel by car has the largest share of tourist travel (Milewski, 2008). The degree of accessibility of the tourist space will therefore depend on the existing road infrastructure, i.e. the network and technical condition of the road lines, the condition of the rolling stock serving the tourist, the organization of the timetable, the frequency of connections and travel time, technical and service facilities, e.g. information, booking and ticketing rules or gas stations, as well as travel costs and the safety of travelers (Pawlikowska-Piechotka, 2009).

When considering the relevance of transportation infrastructure, noteworthy is the report of the Supreme Chamber of Control (2017), in which the controlling institution states that "Polish space is poorly managed, and chaos and lack of spatial order negatively affect the broader quality of life of residents." As a consequence, poor spatial management, including of resorts, will result in uncontrolled urbanization, increased tourist traffic, lack of full protection of monuments and nature, devastation of spatial order and, ultimately, reduced attractiveness of Polish resorts for tourists, residents, and investors. Thus, increased tourist traffic in holiday destinations will significantly influence local government decisions to provide public transportation, as well as individuals (residents and tourists) to use their own transportation.

Spatial and economic aspects, i.e. time, distance, cost and infrastructure, will be important for conducting an analysis of transportation accessibility. In addition, satisfaction with transportation accessibility will be influenced by the integration between its various elements, manifested, among other things, in the synchronization of travel times or the bundling of public transportation tickets (Załoga et al., 2019).

Any way of satisfying mobility for tourism purposes is associated with the need to travel greater or lesser distances. In order to do this, it is necessary to use such a means of transportation that is most convenient from the tourist's point of view (Mężyk, Zamkowska, 2019). He or she will choose a means of transportation that is consistent with his or her destination, the distance he or she needs to travel, the time and financial resources he or she can allocate for the trip, and in harmony with his or her well-being (Pawlikowska-Piechotka, 2009). For example, for families, especially those with children, a passenger car is "best" (Raczyńska-Buława, 2017), which makes it possible to take more luggage and meet daily transportation needs. However, this convenience generates daily, especially during the high tourist season, the movement of large masses of people and the formation of the phenomenon of congestion, which negatively affects traffic conditions and the inefficiency of public transportation. In light of the growing tourist traffic in tourist destinations, it becomes a major challenge to develop them in a harmonious way, taking care to respect economic development, as well as environmental protection. Thus, it can be concluded that transportation accessibility will be a subjective category – assessments may differ depending on the individual predisposition and perception of the tourist.

Data characteristics and research methods used

The research material was obtained through a computer-assisted survey questionnaire (CAWI), which reached 1,000 Polish Internet users in 2022. The detailed distribution of the sample is shown in Table 1.

Table 1. Distribution of the research sample

Feature	Number	Total
Gender		
Female	522	52,2%
Male	478	47,8%
Age		
18-24 years	85	8,5%
25-34 years	162	16,2%
35-44 years	202	20,2%
45-54 years	164	16,4%
55-64 years	154	15,4%
65 and over	233	23,3%
Education		
Elementary	13	1,3%
Junior high school	9	0,9%
Basic vocational	97	9,7%
Secondary	463	46,3%
Higher education	418	41,8%
Size of locality		
Rura	190	19,0%
City up to 20 thousand residents	111	11,1%
City of 20 to 100 thousand residents	291	29,1%
City of 100 to 200 thousand residents	118	11,8%
City of 200 to 500 thousand residents	131	13,1%
Range of income per person in the household		
Up to PLN 500	8	0,8%
From PLN 500 to PLN 1,000	44	4,4%
From 1001 zł to 2000 zł	246	24,6%
From 2001 zł to 3000 zł	358	35,8%
Above 3000 zł	286	28,6%
Refusal	58	5,8%

Source: own study.

Among the respondents, 90.7% had been to a resort at least once within five years of the survey. 4.5% had been, but more than five years ago, while 4.7% had not been to a resort destination at all. Respondents who had visited a resort mainly pointed to Zakopane (6.1% of respondents), Kolobrzeg (4.2% of respondents) and Gdansk (4% of respondents). Between 1% and 3% of respondents mentioned such cities as Władysławowo, Sopot, Krynica-Zdrój, Karpacz, Ustka, Łeba, Mielno, Świnoujście, Krynica Morska, Wisła, Międzyzdroje, Jastrzębia Góra, Polanica-Zdrój, Gdynia, Kraków, Ciechocinek, Kudowa-Zdrój, Sarbinowo, Ustroń, Stegna, Szczawnica and Szklarska Poręba. Overall, respondents visited 262 different holiday destinations.

Respondents were asked to rate the importance of transportation infrastructure elements in the holiday destinations. These elements were divided into eight categories: (1) parking lots, (2) public transportation, (3) private individual transportation, (4) payments, (5) adaptation to the needs of people with disabilities, (6) bicycle transportation, (7) signage, and (8) road condition. Respondents rated the importance

of these elements on a five-point scale from "definitely not important" to "definitely important." Details of the response distributions are provided in Table 2.

Table 2. Distribution of responses regarding infrastructure elements

	Strongly unimportant		Not important		Neither unimportant/ nor important		Important		Strongly important	
1. Parking lots										
1.1 Availability and location	8	(0,8%)	33	(3,3%)	103	(10,3%)	459	(45,9%)	397	(39,7%)
1.2 Availability of park&ride (a parking lot with an interchange function, allowing travel to continue by public transportation)	26	(2,6%)	77	(7,7%)	215	(21,5%)	455	(45,5%)	227	(22,7%)
1.3 Parking space occupancy system	8	(0,8%)	52	(5,2%)	161	(16,1%)	488	(48,8%)	291	(29,1%)
1.4 Availability of electric car charging stations	112	(11,2%)	192	(19,2%)	237	(23,7%)	303	(30,3%)	156	(15,6%)
2. Public transportation										
2.1 Availability of public mass transportation	15	(1,5%)	34	(3,4%)	116	(11,6%)	465	(46,5%)	370	(37%)
2.2 Availability of private public transportation	18	(1,8%)	79	(7,9%)	226	(22,6%)	473	(47,3%)	204	(20,4%)
2.3 Usability of the public transportation network (e.g., schedule transparency, frequency of arrivals, appropriate distribution of stops, etc.)	8	(0,8%)	32	(3,2%)	103	(10,3%)	429	(42,9%)	428	(42,8%)
2.4 Real-time passenger information system (a system to provide users with up-to-date data, e.g. travel time and mileage)	8	(0,8%)	33	(3,3%)	139	(13,9%)	465	(46,5%)	355	(35,5%)
3. individual private communication										
3.1 Availability of private individual transportation (cab, Uber, etc.)	23	(2,3%)	71	(7,1%)	218	(21,8%)	525	(52,5%)	163	(16,3%)
4. Payments										
4.1 Amount of parking fees	9	(0,9%)	32	(3,2%)	102	(10,2%)	440	(44%)	417	(41,7%)
4.2 Amount of communication fees	7	(0,7%)	39	(3,9%)	100	(10%)	469	(46,9%)	385	(38,5%)
4.3. cashless form of payment (payment card, blik, mobile app)	14	(1,4%)	47	(4,7%)	119	(11,9%)	438	(43,8%)	382	(38,2%)
4.4 Ability to purchase a ticket online (from home)	7	(0,7%)	49	(4,9%)	135	(13,5%)	459	(45,9%)	350	(35%)
5. Adaptation to people with disabilities										
5.1 Adaptation of the city's infrastructure to people with disabilities (e.g. ramps, ramps, signage in parking lots)	22	(2,2%)	27	(2,7%)	120	(12%)	426	(42,6%)	405	(40,5%)
5.2 Adaptation of city vehicles to serve people with disabilities (e.g., low-floor buses)	19	(1,9%)	30	(3%)	122	(12,2%)	400	(40%)	429	(42,9%)
5.3 Number of parking spaces for people with disabilities	22	(2,2%)	30	(3%)	150	(15%)	431	(43,1%)	367	(36,7%)
6. Bicycle transportation										
6.1 Availability and location of bicycle paths	15	(1,5%)	49	(4,9%)	152	(15,2%)	479	(47,9%)	305	(30,5%)
6.2 Infrastructure accompanying bicycle paths (parking spaces, shelters, bicycle racks)	18	(1,8%)	63	(6,3%)	152	(15,2%)	516	(51,6%)	251	(25,1%)
6.3 City bicycle, scooter system	30	(3%)	93	(9,3%)	223	(22,3%)	481	(48,1%)	173	(17,3%)
6.4 Bike, scooter rentals	32	(3,2%)	90	(9%)	200	(20%)	478	(47,8%)	200	(20%)
7. Signage										
7.1 Road markings (including parking access)	8	(0,8%)	23	(2,3%)	94	(9,4%)	423	(42,3%)	452	(45,2%)

7.2 Trail marking	7	(0,7%)	19	(1,9%)	83	(8,3%)	407	(40,7%)	484	(48,4%)
7.3 Marking of tourist attractions	7	(0,7%)	23	(2,3%)	66	(6,6%)	440	(44%)	464	(46,4%)
8. Condition of roads										
8.1 Access to the resort village	3	(0,3%)	23	(2,3%)	87	(8,7%)	402	(40,2%)	485	(48,5%)
8.2 Road quality in the resort village	2	(0,2%)	29	(2,9%)	83	(8,3%)	447	(44,7%)	439	(43,9%)
8.3 Travel time through the resort	9	(0,9%)	56	(5,6%)	115	(11,5%)	453	(45,3%)	367	(36,7%)

Source: own study.

Statistica software was used to analyze the data. The factor extraction method (after Laudanski, Mańkowski, Flaszka, 2012) was used, setting the maximum number of factors at four, with a minimum eigenvalue of 1,000. Five factors with values above 1,000 were identified, but the fifth factor did not reach a factor load value of 0.7, reducing the number of factors to four. The principal component method was used, and the eigenvalues were respectively: 9,54896, 2,15522, 1,58375, 1,39957.

Results of own research

The research material was obtained through a computer-assisted survey questionnaire (CAWI), which reached a random sample of 1,000 Poles in 2022. Respondents were asked to rate the importance of transportation infrastructure elements in holiday destinations. These elements were divided into eight categories: (1) parking, (2) public transportation, (3) private individual transportation, (4) payment, (5) adaptation to the needs of people with disabilities, (6) bicycle transportation, (7) signage, and (8) road condition. Respondents rated the importance of these elements on a five-point scale from "definitely not important" to "definitely important."

A factor extraction method was used to analyze the data, setting the maximum number of factors at four, with a minimum eigenvalue of 1,000. Five factors with values above 1.000 were identified, but the fifth factor did not reach a factor loading value of 0.7, reducing the number of factors to four. The principal component method was used, and the eigenvalues were respectively: 9.54896, 2.15522, 1.58375, 1.39957.

The study used normalized Varimax rotation, a factor rotation method used in factor analysis used to highlight the extremes of the strength of the loadings of the factors under study, which facilitates the interpretation of the results. It was assumed that the value of factor loadings should be above 0.7 to reveal a strong association between the factors under study and the latent factor. The number of variables for infrastructure features was narrowed down to the four factors of greatest importance. The percentage of total variance shows the extent to which a factor explains an issue, with the first factor explaining the largest portion of the variance, followed by a sudden decline. Table 1 presents the calculation of the eigenvalues of factor loadings by the four factor areas.

Table 3. Results of factor analysis – eigenvalues of factor loadings

Factor loadings	Factor 1	Factor 2	Factor 3	Factor 4
1.1. Accessibility and location	0.556273	0.093302	0.225172	0.101311
1.2. Availability of park&ride (a parking lot with a transfer function, allowing the continuation of travel by public transport)	0.233305	0.341663	0.386775	0.108898
1.3. Parking space occupancy system	0.462171	0.297355	0.253206	0.139627
1.4. Availability of electric car charging stations	-0.088360	0.473007	0.336857	0.231835
2.1. Availability of public mass transportation	0.282342	0.035155	0.674708	0.290722
2.2. Availability of private mass transportation	0.078246	0.223839	0.728212	0.091484
2.3. Utility of the public transportation network (e.g., schedule transparency, frequency of arrivals, appropriate distribution of stops, etc.)	0.320264	0.006235	0.653447	0.312569
2.4. Real-time passenger information system (a system for providing users with up-to-date data, e.g. travel time and mileage)	0.310042	0.107630	0.658880	0.244179
3.1. Availability of private individual transportation (taxi, Uber, etc.)	0.122044	0.394870	0.520810	-0.006291

4.1. Parking fees	0.651812	0.099339	0.175562	0.129674
4.2. Amount of communication fees	0.506880	0.028941	0.473012	0.168990
4.3. Cashless form of payment (payment card, blik, mobile application)	0.499750	0.267655	0.344665	-0.116680
4.4. Ability to purchase a ticket online (from home)	0.392917	0.351805	0.357025	-0.107376
5.1. Adaptation of the city's infrastructure for people with disabilities (e.g. ramps, ramps, signage in parking lots)	0.281487	0.198718	0.225817	0.799600
5.2. Adaptation of city vehicles to serve people with disabilities (e.g., low-floor buses)	0.265617	0.220326	0.232890	0.802591
5.3. Number of parking spaces for people with disabilities	0.234369	0.286432	0.240061	0.740904
6.1. Availability and location of bicycle paths	0.318983	0.643616	0.055066	0.262673
6.2. Infrastructure accompanying bicycle paths (parking spaces, shelters, bicycle racks)	0.294433	0.719585	0.094001	0.259219
6.3. Urban bicycle, scooter system	0.128237	0.813525	0.137261	0.093959
6.4. Rentals of bicycles, scooters	0.114462	0.810691	0.100882	0.080573
7.1. Road marking (including access to parking)	0.743883	0.094581	0.099520	0.304373
7.2. Trail markings	0.717094	0.125468	0.097313	0.252088
7.3. Marking of tourist attractions	0.683005	0.137588	0.073451	0.229796
8.1. Access to the resort village	0.745042	0.042239	0.191779	0.170794
8.2. Road quality in the resort village	0.713060	0.148111	0.142152	0.136283
8.3. Travel time through the locality	0.579003	0.213978	0.152919	-0.045925
Baseline value	**5.326201**	**3.396881**	**3.305474**	**2.658946**
Share	**0.204854**	**0.130649**	**0.127134**	**0.102267**

Note:

- Factors with a value of more than 0.7 are marked in red.

- Factors with a value of more than 0.6 are marked in green.

Source: Own study.

As already written, factors with eigenvalues of loadings above 0.7 (highlighted in red in Table 1) were considered significant. Factor 1 (7.1, 7.2, 8.1, 8.2) and factor 4 (5.1, 5.2, 5.3) according to Cronbach's alpha test have good reliability, while factor 2 (6.2, 6.3, 6.4) is borderline. Factor 3 (2.2) does not require a test because it contains only one variable. The contribution of these factors to explaining variance is 20.49%, 13.06%, 12.71% and 10.23%, respectively.

Together, these four factors explain 56.49% of the total variance, indicating their significance in the evaluation of transportation infrastructure. The most important factor (1) relates to roads and their signage. The other factors have less potential in explaining transportation infrastructure issues. Some of the loadings are close to the value of 0.7. Thus, loadings close to 0.7 (i.e. above the value of 0.6, highlighted in green in Table 1), which have better Cronbach's alpha values, were included in the analysis. This is a fundamental argument for the need to expand the included loadings in the analysis. They create the key areas of greatest importance in terms of the relevance of transportation infrastructure elements as assessed by survey respondents. These areas are shown in Table 2.

Table 4. Results of factor analysis – factor areas

Factor areas	Value Cronbach's alpha
1. General infrastructure area 4.1 Parking fees 7.1 Road signage 7.2 Marking of trails 7.3 Marking of tourist attractions 8.1 Access to the resort village 8.2 Quality of roads in the resort village	0.869

2. Bicycle transportation area 6.1 Availability and location of bicycle paths 6.2 Infrastructure accompanying bicycle paths 6.3 System of city bicycles, scooters 6.4 Rentals of bicycles, scooters	0.853
3. Public transport area 2.1 Availability of public mass transportation 2.2 Availability of private public transportation 2.3 Utility of the public transportation network 2.4 Real-time passenger information system	0.818
4. Area of facilities for people with disabilities 5.1 Adaptation of the city's infrastructure to people with disabilities 5.2 Adaptation of city vehicles to serve people with disabilities 5.3 Number of parking spaces for people with disabilities	0.905

Source: Own study.

Transportation accessibility in the four areas shown in the study is a key composite of factors that determine the development of tourism in resort areas. Factor analysis clearly showed that these are: (1) general infrastructure, (2) bicycle transportation, (3) public transportation, and (4) facilities for people with disabilities.

The general infrastructure area includes key infrastructure elements that are important to the operation of resort town. A high Cronbach's alpha value (0.869) indicates good internal consistency for this factor, meaning that the variables included are strongly related. Elements such as road signage, road quality and parking availability are key to respondents' assessment of infrastructure. This is a fairly obvious conclusion, as good signage on roads and tourist trails, as well as the quality of these roads, affect the comfort and safety of travelers. In addition, the amount of parking fees and the availability of parking spaces also play an important role in the assessment of overall infrastructure, which generally supports the need to focus on these elements in designing improvements to the transportation infrastructure of a resort town.

The bicycle transportation area, as the name suggests, focuses on bicycle infrastructure, which is important for sustainable transportation in resort town. The high value of Cronbach's alpha (0.853) suggests that the variables included in this area are well correlated with each other, highlighting the importance of comprehensive bicycle infrastructure as relevant to a tourist destination. The availability and location of bicycle paths, supporting infrastructure (such as parking spaces and bicycle racks), as well as bicycle and scooter rental systems, are key to promoting active lifestyles and environmentally friendly transportation. A well-developed bicycle infrastructure can attract tourists who prefer active recreation and reduce the burden on automobile transportation.

The area of public transportation concerns public transport, which is important for mobility in resort town. The value of Cronbach's alpha (0.818) indicates good consistency of the variables, which means that the availability and usability of public transportation and passenger information systems are important to respondents. The accessibility of public and private mass transportation, the transparency of schedules, the frequency of arrivals and departures, and the appropriate distribution of stops affect the convenience and efficiency of travel, and at the same time tourism. In turn, real-time passenger information systems, providing up-to-date data and information on travel times and routes, increase user comfort and allow better planning of trips to and from tourist destinations.

The area of facilities for people with disabilities is related to ensuring the accessibility of infrastructure. A very high Cronbach's alpha value (0.905) indicates exceptionally good consistency among the variables, which underscores the importance of adapting urban infrastructure and vehicles to the needs of people with disabilities. Adapting city infrastructure, such as ramps, ramps and signage in parking lots, and adapting city vehicles, such as low-floor buses, are key to ensuring equal opportunities for people with disabilities to use transportation infrastructure. In addition, the number of parking spaces for these people also plays an important role in assessing infrastructure accessibility.

In summary, the high Cronbach's alpha values for all four factor areas indicate close internal consistency among the variables included in each area, confirming their relevance in respondents' assessment of infrastructure to their perception of the resort as an accessible tourist destination.

Relating the results of the conducted research to the theoretical concept of the so-called inverted mobility pyramid, one can see some serious inconsistency between tourism practice and the idea of shaping a sustainable mobility system. This pyramid presents a model approach to the issue of transportation design, for example, in resort town, which can have an impact on the formation of tourist accessibility. Figure 1 shows the assumptions of a sustainable mobility system. At the top of the pyramid is active travel (active micromobility), i.e. walking, as well as non-motorized traffic such as scooters and bicycles. The next tier is made up of electrically assisted vehicles (passive micromobility). The next element, which is public transportation, is also of great importance in shaping transportation accessibility. At the end of the model shot are cabs, private cars, and traffic caused by trucks. Such a theoretical account also has its weaknesses – the biggest challenge of resort towns is that there is no good substitute for individual transportation. According to the research conducted in this article, the most important factors for a tourist are those in the area of general infrastructure. This indicates that the tourist, however, most often chooses the private car. Taking into account the described model of the inverted mobility pyramid, it should be noted that in Polish destinations, in many strategic documents it is public transport that is placed at the top of the pyramid – the place where tourists actively move.

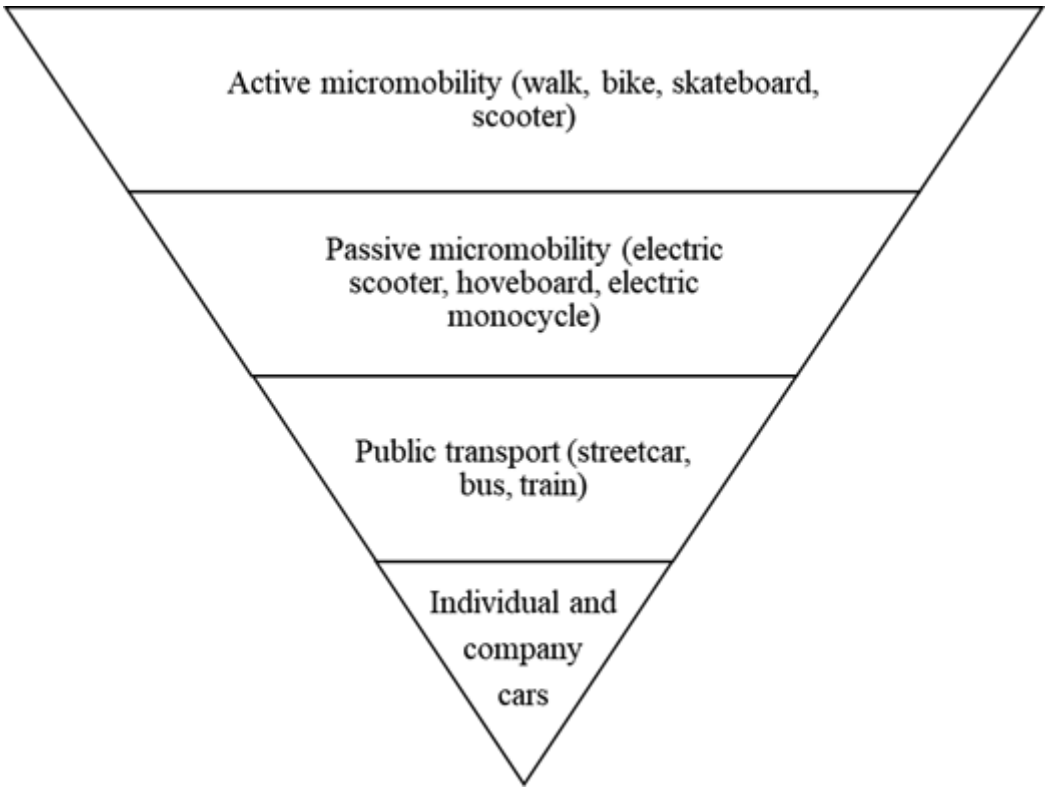

Figure 1. Inverted pyramid of mobility

Source: Own compilation based on https://bicyclenetwork.com.au/tips-resources/bike-friendly-communities/new-reverse--traffic-pyramid/, (20.11.2024).

The uncontrolled process of urbanization (Supreme Chamber of Control, 2017) and the systematic growth of tourism (Central Statistical Office, 2023) influence the shape and development of resort town. The travel preferences of tourists revealed in the study, the strategic initiatives undertaken by the authorities of resort town and the ideas contained in the inverted mobility pyramid point to a disharmony in the attitudes of individual stakeholders, which is an excellent starting point for in-depth research.

Conclusions

The purpose of the article was to determine which of the surveyed elements of the transportation infrastructure of a resort, respondents consider important in the context of assessing tourist accessibility. In the course of the considerations, four most important areas were identified, which, according to the respondents, have an impact on the formation of said transport accessibility. Given the predominance of individual transportation, in spite of the model approach included in the concept of the inverted pyramid of mobility, it is not surprising that respondents rated the quality of general infrastructure as the most important of the factors. The marking of roads and tourist trails, as well as attention to safety, are a priority for tourists. Bicycle infrastructure is the next most important for active vacationers. Only the third important area from the respondents' point of view was public transportation, followed by the area of infrastructure for people with disabilities.

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